



DM3730/AM3703 Torpedo + Wireless SOM

Product Change Notification

Hardware Documentation

Logic PD // Products
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Revision History

REV	EDITOR	DESCRIPTION	APPROVAL	DATE
A	SO, EN	-Initial release	EN, JMC	03/01/12
B	SO	-Section 2.1: Removed industrial temperature SOM; changed new model number revision character to -2 and new part number revision character to D for commercial temperature SOM	SO	03/08/12
C	SO	-Released PCN 543: Production Changes	NJK, EN	07/03/12
D	SO	-Section 3.2.1: Added statement regarding incompatibility of new DM3730 Torpedo + Wireless SOM with older development kit baseboards	KH, NJK	08/06/12
E	SO, NJK	-Section 1.2: Updated example of sticker on SOM to reflect new format; -Released PCN 550: Product Model Revision – Certification Marking	KH, JMC	09/10/12
F	SO	-Released PCN 562: Hardware Changes	NJK, KJH, JMC	04/17/13
G	SO, NJK	-Released PCN 578: EOL Notice & Hardware Changes	KJH, JMC, RAH	07/15/13
H	SO	-Throughout: Updated template; updated links for new support site; -Section 6.2.1: Updated note to indicate that engineering samples should now be purchased from Logic PD	KJH	11/13/13
I	JMC	-Section 1.3: Updated current standard models table -Release PCN 604: Hardware Changes	JMC, BSB	12/2/14

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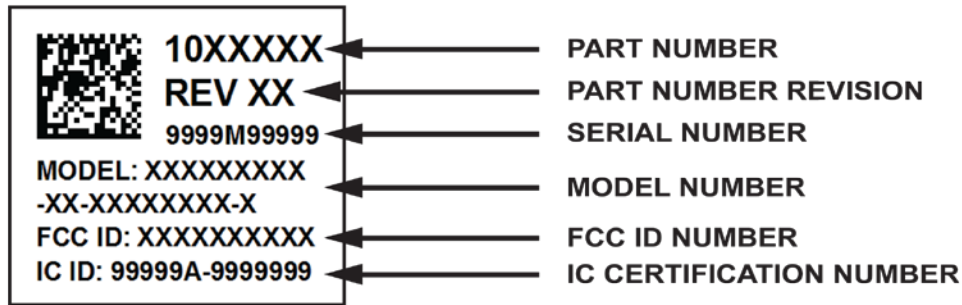
1 DM3730/AM3703 Torpedo + Wireless SOM PCN Introduction

1.1 Purpose of Document

The purpose of this document is to provide a single repository for explaining design changes to a specific product family. The changes described in this document relate to the DM3730/AM3703 Torpedo + Wireless SOM product family.

1.2 Determining What Build You Have

To determine whether your DM3730/AM3703 Torpedo + Wireless SOM is affected by a PCN, locate the sticker on your System on Module (SOM) and compare the model number with the "Affected Models" table for each PCN. In some instances, a PCN may call out the "unique serial number" or "part number" to better identify the affected SOM. The figure below shows the location of each number on the sticker.



NOTE: Please see Logic PD's [WP 293 Model Number Explanation and Decoder](#)¹ for additional information about these numbers and their relationship to one another.

1.3 Current Standard Model in Production

The table below lists the most current revisions of standard DM3730/AM3703 Torpedo + Wireless SOMs. It also specifies the PCN that details the changes prompting the model revision.

Model Number & Rev	PCN Detailing Revision
SOMAM3703-31-1780AKIR-B	PCN 604: Hardware Changes
SOMDM3730-31-1780AKIR-B	PCN 604: Hardware Changes
SOMDM3730-31-2780AKCR-B	PCN 604: Hardware Changes
SOMDM3730-31-1880AKIR-A	PCN 578: EOL Notice & Hardware Changes

¹ <http://support.logicpd.com/DesktopModules/Bring2mind/DMX/Download.aspx?portalid=0&EntryId=1378>

1.4 Early Development Modules

SOMs that are manufactured before the model is released to full production status are sometimes sent to partners and targeted customers for evaluation. This section attempts to capture a history of these pre-production builds for reference. Any products listed in the table below are not meant for production use and may not be actively supported by Logic PD.

Development Phase	Model Number & Rev (Part Number)
Alpha	(1020027)
Beta	SOMDM3730-30-1780AKIR-1 (1020728)
	SOMDM3730-30-2780AKCR-1 (1020610)
Pilot	SOMDM3730-30-2780AKCR-2 (1020610)

2 PCN 526: Pre-Production Software Changes

Published: March 2012

PCN Classification:

- A - Recall
- B - Customer Action Required
- C - Product Upgrade
- D - Change of Production Line

2.1 Products Affected

This PCN describes the software changes that were made to the DM3730 Torpedo + Wireless SOM between the Beta and Pilot development phases.

Affected Model Number & Rev (Part Number)	New Model Number & Rev (Part Number)
SOMDM3730-30-2780AKCR-1 (1020610)	SOMDM3730-30-2780AKCR-2 (1020610)

2.2 Description of Change

2.2.1 LogicLoader Change

The LogicLoader software included on the DM3730 Torpedo + Wireless SOM has been upgraded to version 2.5.1. This new version of LogicLoader includes the updates noted below.

- Adds support for the DM3730 Torpedo + Wireless SOM.
- Prints warning when LogicLoader gains control after an *exec* command stating that the *jump* command might be a better choice. This is based on the idea that *exec* should be used to launch an Operating System (OS) and never return, while *jump* should be used to launch an OS-less application and return.
- Fixes invalid return codes for the following situations:
 - when loading .bin files
 - when unable to mount
 - when partitions are not supported
 - when a .bin file is corrupt
- Adds missing ADC10 to the list of ADC values shown in the *info* command.
- Clarifies help text for *video-add* command.
- Removes RTC initialization.

LogicLoader version 2.5.1 is backwards compatible with previous versions of the DM3730 Torpedo + Wireless SOM.

2.3 Contact

For additional information, please post a question to the Logic PD [Technical Discussion Group \(TDG\) forum](#).²

² <http://support.logicpd.com/TDGForum.aspx>

3 PCN 543: Production Changes

Published: July 2012

PCN Classification:

- A - Recall
- B - Customer Action Required
- C - Product Upgrade
- D - Change of Production Line

3.1 Products Affected

This PCN describes the hardware and software changes that were made to the DM3730/AM3703 Torpedo + Wireless SOM between the Pilot and Production development phases.

Affected Model Number & Rev (Part Number)	New Model Number & Rev (Part Number)
—	SOMDM3730-30-1780AKIR-A (1021817)
SOMDM3730-30-2780AKCR-2 (1020610)	SOMDM3730-30-2780AKCR-A (1021711)

3.2 Description of Change

3.2.1 Finger Gaskets

Two finger gaskets have been added to the bottom of the DM3730/AM3703 Torpedo + Wireless SOM as components J9 and J10. The finger gaskets will improve the ground connection between the baseboard and the DM3730/AM3703 Torpedo + Wireless SOM, optimizing the RF performance of the SOM's wireless module.

In order to accommodate this change, two ground pads must be included on any baseboard used with the DM3730/AM3703 Torpedo + Wireless SOM to make a connection with the finger gaskets. Please refer to the mechanical drawing included in Appendix A of the [DM3730/AM3703 Torpedo + Wireless SOM Hardware Specification](#)³ to verify the size and location of the ground pads that are needed. For additional information about the finger gaskets, please see the [WP 537 DM3730/AM3703 Torpedo + Wireless SOM RF Grounding](#).⁴

It is important to note that this version of the DM3730 Torpedo + Wireless SOM is not physically backwards compatible with earlier DM3730 Torpedo Development Kits. The finger gaskets now included on the bottom of the SOM may short signals to ground on previous versions of the baseboard.

No software modifications are required to accommodate this change.

³ <http://support.logicpd.com/DesktopModules/Bring2mind/DMX/Download.aspx?portalid=0&EntryId=649>

⁴ <http://support.logicpd.com/DesktopModules/Bring2mind/DMX/Download.aspx?portalid=0&EntryId=657>

3.2.2 LogicLoader Change

The LogicLoader software included on the DM3730/AM3703 Torpedo + Wireless SOM has been upgraded to version 2.5.2. This new version of LogicLoader includes the updates noted below.

- Reduces boot time.
- Fixes issue in which writes to the *lboot* partition following a soft reset corrupt the module and prevent a successful boot.
- Fixes LogicLoader's failure to boot below -30°C when the power is cycled for less than thirty seconds.

LogicLoader version 2.5.2 is backwards compatible with previous versions of the DM3730/AM3703 Torpedo + Wireless SOM.

3.3 Contact

For additional information, please post a question to the Logic PD [Technical Discussion Group \(TDG\) forum](#).⁵

⁵ <http://support.logicpd.com/TDGForum.aspx>

4 PCN 550: Product Model Revision – Certification Marking

Published: September 2012

PCN Classification:

- A - Recall
 B - Customer Action Required
 C - Product Upgrade
 D - Change of Production Line

4.1 Products Affected

This PCN describes the changes that were made to the DM3730/AM3703 Torpedo + Wireless SOM. The "New Model Number & Rev" listed below indicate the first SOMs that will be manufactured with the changes described herein.

Affected Model Number & Rev (Part Number & Rev)	New Model Number & Rev (Part Number & Rev)
—	SOMAM3703-30-1780AKIR-B (1021881 Rev B and higher)
SOMDM3730-30-1780AKIR-A (1021817 Rev B)	SOMDM3730-30-1780AKIR-B (1021817 Rev C and higher)
SOMDM3730-30-2780AKCR-A (1021711 Rev C)	SOMDM3730-30-2780AKCR-B (1021711 Rev D and higher)

4.2 Description of Change

4.2.1 FCC and IC Certification

The DM3730/AM3703 Torpedo + Wireless SOM has obtained certifications from the United States of America Federal Communications Commission (FCC) and Industry Canada (IC) for use with 802.11a/b/g/n wireless Ethernet and Bluetooth. This change adds the FCC identification number (ID) and IC certification number to the label permanently affixed to the SOM; no hardware modifications were made with this change.

Customers who wish to use the DM3730/AM3703 Torpedo + Wireless SOM with 802.11a/b/g/n and/or Bluetooth in their end product must follow specific FCC and IC regulations. In particular, to retain modular transmitter approval, the operating system (OS) images must be built using a Logic PD board support package (BSP) that incorporates valid FCC/IC radio initialization parameters. Please refer to the [AN 538 FCC/IC Certification Guidelines for End Products Using the DM3730/AM3703 Torpedo + Wireless SOM](#)⁶ and the [DM3730/AM3703 Torpedo + Wireless SOM Hardware Specification](#)⁷ for additional information about regulation compliance and software requirements.

NOTE: Use of valid FCC/IC radio initialization parameters is not required to simply operate the DM3730/AM3703 Torpedo + Wireless SOM. It is only required for customers who wish to use 802.11a/b/g/n and/or Bluetooth with the FCC/IC certifications obtained by Logic PD.

⁶ <http://support.logicpd.com/DesktopModules/Bring2mind/DMX/Download.aspx?portalid=0&EntryId=643>

⁷ <http://support.logicpd.com/DesktopModules/Bring2mind/DMX/Download.aspx?portalid=0&EntryId=649>

4.3 Contact

For additional information, please post a question to the Logic PD [Technical Discussion Group \(TDG\) forum](#).⁸

⁸ <http://support.logicpd.com/TDGForum.aspx>

5 PCN 562: Hardware Changes

Published: April 2013

PCN Classification:

- A - Recall
 B - Customer Action Required
 C - Product Upgrade
 D - Change of Production Line

5.1 Products Affected

This PCN describes hardware changes that were made to the DM3730/AM3703 Torpedo + Wireless SOM to improve performance. The "New Model Number & Rev" listed below indicate the first SOMs that will be manufactured with the changes described herein.

Affected Model Number & Rev (Part Number)	New Model Number & Rev (Part Number)
SOMAM3703-30-1780AKIR-B (1021881)	SOMAM3703-30-1780AKIR-C (1024025)
SOMDM3730-30-1780AKIR-B (1021817)	SOMDM3730-30-1780AKIR-C (1023749)
SOMDM3730-30-2780AKCR-B (1021711)	SOMDM3730-30-2780AKCR-C (1023758)

5.2 Description of Change

5.2.1 NAND Flash (PoP Memory) Change

Micron issued an End of Life (EOL) notice for the Package-on-Package (PoP) memory component with manufacturer part number MT29C4G48MAZAPAKQ-5IT on the DM3730/AM3703 Torpedo + Wireless SOM. A new Micron PoP memory component with manufacturer part number MT29C4G48MAZBAAKQ-5IT is a die shrink update of the previous component and will be used as a replacement.

Logic PD re-qualified the DM3730/AM3703 Torpedo + Wireless SOM with the new component and found no software modifications are necessary. Bus timings for the new memory component are also identical to the previous version.

NOTE: Logic PD recommends purchasing sample units and testing them with your software and manufacturing flow to verify compatibility with your application.

5.3 Contact

For additional information, please post a question to the Logic PD [Technical Discussion Group \(TDG\) forum](#).⁹

⁹ <http://support.logicpd.com/TDGForum.aspx>

6 PCN 578: EOL Notice & Hardware Changes

Published: July 2013
Updated: November 2013

PCN Classification:

- A - Recall
- B - Customer Action Required
- C - Product Upgrade
- D - Change of Production Line

6.1 Products Affected

This PCN describes hardware changes that were made to the DM3730/AM3703 Torpedo + Wireless SOM to improve performance. The "Replacement Model Number & Rev" listed below indicate the first SOMs that will be manufactured with the changes described herein.

Please be aware that these changes are significant enough from the previous model revisions that the model number version code has been incremented from -30 to -31. Therefore, the former -30 model numbers are being discontinued and the new -31 model numbers are being instituted, all beginning at revision A.

Discontinued Model Number & Rev (Part Number)	Replacement Model Number & Rev (Part Number)
SOMAM3703-30-1780AKIR-C (1024025)	SOMAM3703-31-1780AKIR-A (1024205)
SOMDM3730-30-1780AKIR-C (1023749)	SOMDM3730-31-1780AKIR-A (1024174)
SOMDM3730-30-2780AKCR-C (1023758)	SOMDM3730-31-2780AKCR-A (1024184)
SOMDM3730-30-1880AKIR-A (1023698)	SOMDM3730-31-1880AKIR-A (1024160)

6.2 Description of Change

6.2.1 26 MHz Clock Change

The 26 MHz clock oscillator circuit on the DM3730/AM3703 Torpedo + Wireless SOM was changed to improve performance on the wireless interfaces. Y4 previously drove the 26 MHz clock into both the TPS65950 PMIC and D7002 module. Y5 was added to the design as a dedicated oscillator for the TPS65950 PMIC, turning Y4 into a dedicated oscillator for the D7002 module.

The U20 alternate clock option, Texas Instruments' (TI) LMH2191, was also added to the SOM; this clock option is not populated by default.

Components C206, C207, and R160-R167 were added to the design to support the two clock options above; components R107, R121, and R137 were removed. Capacitor C201 was changed from a 0402 footprint to a 0201 footprint.

These changes are backwards compatible in terms of SOM functionality and do not affect software.

NOTE: Logic PD recommends purchasing sample units and testing them with your software and manufacturing flow to verify compatibility with your application.

6.2.2 FCC and IC Certification

Based on the above changes, the DM3730/AM3703 Torpedo + Wireless SOM has obtained updated certifications from the United States of America Federal Communications Commission (FCC) and Industry Canada (IC) for use with 802.11a/b/g/n wireless Ethernet and Bluetooth. The new FCC identification number (ID) and IC certification number can be found on the label permanently affixed to the SOM.

The change in Logic PD's FCC and IC certification does require a software update. To retain Logic PD's modular transmitter approval, the operating system (OS) images must be built using a Logic PD board support package (BSP) that incorporates valid FCC/IC radio initialization parameters. Customers who wish to use the DM3730/AM3703 Torpedo + Wireless SOM with 802.11a/b/g/n and/or Bluetooth in their end product must follow specific FCC and IC regulations.

Please refer to [AN 538 FCC/IC Certification Guidelines for End Products Using the DM3730/AM3703 Torpedo + Wireless SOM](#)¹⁰ and the [DM3730/AM3703 Torpedo + Wireless SOM Hardware Specification](#)¹¹ for additional information about regulation compliance and software requirements.

6.3 Contact

For additional information, please post a question to the Logic PD [Technical Discussion Group \(TDG\) forum](#).¹²

¹⁰ <http://support.logicpd.com/DesktopModules/Bring2mind/DMX/Download.aspx?portalid=0&EntryId=643>

¹¹ <http://support.logicpd.com/DesktopModules/Bring2mind/DMX/Download.aspx?portalid=0&EntryId=649>

¹² <http://support.logicpd.com/TDGForum.aspx>

7 PCN 604: Hardware Changes

Published: December 2014

PCN Classification:

- A - Recall
- B - Customer Action Required
- C - Product Upgrade
- D - Change of Production Line

7.1 Products Affected

This PCN describes hardware changes made to the DM3730/AM3703 Torpedo + Wireless SOM. The "Replacement Model Number & Rev" listed below indicate the first SOMs that will be manufactured with the changes described herein.

Affected Model Number & Rev (Part Number)	New Model Number & Rev (Part Number)
SOMAM3703-31-1780AKIR-A (1024205)	SOMAM3703-31-1780AKIR-B (1026738)
SOMDM3730-31-1780AKIR-A (1024174)	SOMDM3730-31-1780AKIR-B (1026739)
SOMDM3730-31-2780AKCR-A (1024184)	SOMDM3730-31-2780AKCR-B (1026740)

7.2 Description of Change

7.2.1 NAND/DDR (PoP Memory) Change

Micron issued an End of Life (EOL) notice for the Package-on-Package (PoP) memory component with manufacturer part number MT29C4G48MAZBAKQ-5 IT on the DM3730/AM3703 Torpedo + Wireless SOM. A new Micron PoP memory component with manufacturer part number MT29C4G48MAZBBAKB-48 IT is a die shrink update of the previous component and will be used as a replacement.

Logic PD re-qualified the DM3730/AM3703 Torpedo + Wireless SOM with the new component and found no software modifications are necessary. Bus timings for the new memory component are compatible with the previous version.

NOTE: Logic PD recommends purchasing sample units and testing them with your software and manufacturing flow to verify compatibility with your application.

7.3 Contact

For additional information, please post a question to the Logic PD [Technical Discussion Group \(TDG\) forum](#).¹³

¹³ <http://support.logicpd.com/TDGForum.aspx>